

The Times Higher Education Supplement

03 December 2005

**The certainty of boom and bust**

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Published: 02 December 2005

Title: *War and Peace and War: The Life Cycles of Imperial Nations*

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The rise and fall of human societies is a staple for historians, but what light can an evolutionary biologist shed on it? Gordon Johnson investigates

Peter Turchin may not think I am the ideal reviewer for his *War and Peace and War*, for I am a political historian of the most conventional type, with most of my research being in the modern period and concerned with the British Empire. He is professor of ecology and evolutionary biology, and a serious mathematician to boot, whose main concern in this book is to analyse the pre-industrial land-based European superstates to find out why some nations build successful empires and others do not. And why, inevitably, even the successful eventually go into decline. On the other hand, he is, as his publisher claims, presenting "cliodynamics, the new science of history, to general readers for the first time" and has "rewritten the history of the world", so I suppose there is some justice in a review of his book from an old-fashioned historian, even if it is someone whose mathematics barely reaches O-level algebra.

Turchin's scholarly reputation has rested hitherto on the application of mathematical theory and statistical modelling to various sorts of ecosystems - for example, how populations of larch budmoth or red grouse, or voles, lemmings, hares and ungulates, go through various definable cycles in relation to their size and the physical environments in which they are located. He finds a clear relationship between the size and structure of populations and their ability to reproduce within a given context. In the right environment, populations grow; but at some point the pressure on resources precipitates catastrophic decline. Decline again alters the balance and permits a new phase of growth and expansion, so there is a recognisable and trackable (though not necessarily predictable) life cycle for all living things.

A further important finding makes Turchin a leading light in contemporary evolutionary theory. He is critical of the argument that the individual or gene is always selfish and seeks only its own survival. In the struggle for survival, collaboration and adaptation within and among species is as important as competition between individuals. This is, of course, a throwback to some of Darwin's own formulations, but one that has tended to be downplayed in recent years.

These insights Turchin now applies to human history. In a year in which human societies have been devastated by, or are under threat from, some largely uncontrollable "natural" forces - tsunami, hurricane, earthquake and virus spread by wild birds - it does no harm to be reminded of the fragility of existence and the ways in which our physical environment determines our lives. But Turchin goes beyond this: he wants to persuade us that human history is shaped by further great impersonal forces, "not by actions of single individuals, but by actions of whole collectives of them". Some societies, in identifiable times and places, are able to step beyond the vision of the individual or small related groups such as the family or clan. In defiance of a narrow self-interest or an obvious rational choice for self-advancement, they are programmed to co-operate effectively to build general social capital, and by doing so are energised to set out on the path of creating larger and larger political entities.

Such successful societies, Turchin argues, will emerge in frontier zones between different cultures, defined linguistically or religiously, or between different types of human settlement, such as that between nomad and peasant, pastoralist and plainsman. Thus he gives a thrilling account of the fluctuations in fortune in the build-up and subsequent decline of the Russian Empire, with generous quotations from

contemporary chronicles, by detailing relations between Muscovy and the Crimea, between the Russians and the Tatars. He draws out in his underlying analysis the similarity between this long-lived historical example and the expansion of new Americans across a moving frontier. By far the largest part of the book is devoted to a case study, spread over a millennium, of the reasons for the rise and subsequent decline of the Roman Empire, and again this is done with fine simplification and panache.

On a smaller scale, he draws attention to the changing lot of states in Western Europe in the later Middle Ages. Here he places greatest emphasis on the shifting relationship between people and resources: he posits times of plenty, when resources were sufficient to support a population, if not in a condition of equality, at least in a situation where everyone could survive well. Such periods of relative prosperity lead, according to his models, not just to an increase in population, but also to growing material inequalities between individuals and social classes. This leads to scarcity and a breakdown of social co-operation. At the brink, rapid population collapse is triggered through disease, violence and war. Once a society is purged in this way, the social forces that make for the building-up of the common good come into play again and it may resume an expansive trajectory.

Thus, on both a grand scale (the Russian and Roman Empires) and on a smaller scale (the social upheavals of Western Europe in the 12th to 15th centuries), Turchin is able to argue for a series of social cycles, nested within each other. This is no simple linear rise and fall of complex societies, but rather one that takes many turns of the wheel to work itself out. The complexity enables Turchin's theories to avoid the charge of being too simple or little more than common knowledge cloaked in a more rigorous (mathematical) formulation. He also, rather disarmingly, admits that his broad theory excludes many things (the role of individuals in history, for example), but tells us that in science that does not really matter. A scientific theory does not have to be right or all-embracing to be a good theory, and the purpose of a good theory is to explain something, even if it is later shown to be wrong in some fundamental way (Newton's "laws" meet these criteria).

Although he reminds us time and again that his arguments derive from a rigorously mathematical perspective, he does not go into this but refers interested readers to scientific work he has published or is about to publish (while warning that these works are "not light reading - they have lots of equations, data graphs and statistical analyses"). *War and Peace and War* is intended for the widest possible lay readership and aims to explain everything in narrative terms. Turchin's prose is very catchy, and he is an enthusiast, determined to persuade that he has the right stories and that embedded in his theory (which may, of course, be wrong) are important insights for the future. He freely concedes that there is little new in the essence of his main political argument, namely that societies that create a high degree of co-operative spirit and social capital (even if this may be heavily conditioned by their physical environment) prosper and expand. But to make sure we will think about this and remember it, he chooses to tell us that the best earlier formulation of this argument comes from the 14th-century North African historian Ibn Khaldun. Turchin takes from him the term "asabiya" to describe conditions of selfless social co-operation; Ibn Khaldun had seen communities along the north African littoral band together against the nomads of the desert. Thus those who created Russia did so by co-operating in the face of Tatar raids on their several agricultural settlements, and the intrusion of Gauls into Italy was the "decisive factor" in knocking together the discrete social segments that led to the rise of Rome.

So how does this book strike the professional historian? Undoubtedly, some will cavil at small inaccuracies (it was Voltaire, not Marx, who wrote that the Holy Roman Empire was none of those things) and, although attracted by Turchin's theory, will find it does not work for their own particular subject. There is also a certain naivety in the interpretive weight put on all those long quotations from classical and medieval sources and an unsophisticated handling of the rather few secondary authorities used to make the narrative go with a swing. Turchin would say this is beside the point: to get at a real truth you need to see beyond the complexities, to devise a stratagem that strips theory to its essentials. After all, in a flask of atoms the uncountable tiny particles move about in totally unpredictable ways when

jostled or heated, yet it is possible to derive a general law about what is going on, unclouded by the specific movement of each molecule. But history is, of course, about the specific: what happened and why in a given time and place. The interest is in the detail of what people did rather than knowing that in general they were constrained, like some larch budmoth, by the grand forces of the biosphere. The arguments are all about what the narrative is and what it meant both at the time and afterwards.

Yet it is also the case that subjects benefit from knowing how other scholarly disciplines work and how their best practitioners think. History has had a long, and on the whole fruitful, relationship with adjacent subjects such as archaeology and anthropology, and is just emerging from a testing (and largely negative) cohabitation with literary and cultural theory. Turchin's view of our subject from the perspective of an evolutionary biologist, versed in the hard language of mathematics, promises a great deal. He may not have invented a new science or rewritten the history of the world, but he might encourage others in the history profession to think differently and to consider whether they should take down their disciplinary scaffolding from time to time to share their ideas more effectively with a popular readership.

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Why do some nations, initially small and insignificant, go on to build mighty empires, while most nations fail to do so? And why do those successful empire-builders always eventually lose their empires? Peter Turchin, a leading thinker in the highly technical field of population dynamics, lucidly presents for the first time an approach to understanding the world's great powers throughout history--with powerful implications for nations today. Turchin shows how the edges of empires are the crucibles of new long-lived empires and how processes of decline inevitably follow on a 1000 year cycl...